

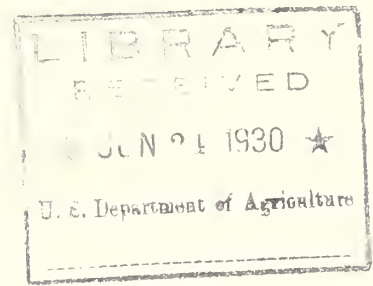
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STEM RUST AND BARBERRY NEWS

Issued by

Office of Barberry Eradication



Volume I

Number 3

June 10, 1930

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Bureau of Plant Industry
U. S. Department of Agriculture

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PUBLICITY ACTIVITIES

The barberry eradication educational program in the primary and secondary schools of the area is practically complete for this year. Nearly every Barberry Leader has introduced the Rust Busters Club into the schools in his State with some degree of success. Many new locations of barberry bushes should be reported this summer by school children and every effort should be made to make each "find" the occasion for some interesting local newspaper publicity.

Plans are now being made for summer programs in the normal training schools and colleges. Definite schedules have been arranged in some of the States with the boys and girls club camp leaders to present illustrated talks on black stem rust and the common barberry at some of the camps.

A new edition of the Warning Poster is being printed by the Conference for the Prevention of Grain Rust and will be available by July 1. It would be well for the Leaders to place their orders immediately for future delivery. The difficulties encountered last year when the outdoor posters were printed have made it advisable to discontinue this item. The posters this year will be printed on tag board similar to last year's indoor issue and on heavy folding enamel paper.

Collections of rusted barberry specimens are now being made in sufficient quantities to insure us against running short. Pressing frames, blotters and corrugated board are available and some have been sent to Barberry Leaders who wish to prepare a limited quantity of specimens of 8 to 10 inch barberry twigs for use in their States.

A small quantity of the 1929 Loss Statements will be printed by the Conference in the near future. A supply proportionate to the amounts shipped to the Leaders last year will be sent out as soon as the new edition is off the press.

Donald G. Fletcher

L. A. Employment prior to Appointment

The following is a copy of a communication from the Solicitor's Office to the Assistant Chief of the Bureau of Plant Industry of recent date. This appears to give a definite basis for determining our latitude in respect to most cases we will encounter. Please be guided accordingly.

"Dear Mr. Allanson:

"I received your letter of May 23, 1930, enclosing copy of a letter from Mr. Roy Calhoun, in which he asks seven questions relative to the appointment of employees under authorization, etc. Those questions will be answered in the order given:

"1. Can we employ an individual under Letter of Authorization on a full time basis prior to his appointment when the appointment is to be on a permanent basis?

"No, as this would be doing indirectly what the Comptroller General has held can not be done directly, in that it would be antedating an appointment. (8 Comp. Gen. 582, 3 Comp. Gen. 559, Manuscript Decision A-24404, September 19, 1928, copy of which is enclosed herewith)

"2. Can we employ an individual under Letter of Authorization on a full time basis prior to appointment when the appointment is to be on a temporary basis?

"No, as the same conditions apply as to the answer in No. 1.

"3. Can we employ an individual under Letter of Authorization, either by the hour W.A.E. or by the day W.A.E., prior to an appointment on a temporary or permanent basis?

"No, as the same conditions apply as to the answer in No. 1.

"4. Can we employ an individual under Letter of Authorization temporarily to carry on certain work prior to the appointment of another individual to fill that position which will be either on a temporary or a permanent basis?

"Yes, as this would not be antedating an appointment in that the same person is not to be appointed to the position on the Secretary's approval.

"5. Does the fact that the above cases refer to positions in the classified or unclassified service alter the procedure to be followed?

"No, as the whole question is one which addresses itself to the original appointment which, if allowed to be made on a letter of authorization and is later followed up by an appointment which is handled through the Personnel Office, is in effect allowing a man to hold a position for a period of time prior to the date that the Secretary approves his appointment in the regular manner.

"6. Are the answers to the above questions the same whether the position in question is an office or field job?

"Yes, as it makes no difference whether it is a field or an office job, as the procedure would be the same.

"7. Certain individuals have been employed in this office under Letter of Authorization at very intermittent periods who will be employed under appointment during the summer. Is this procedure in accordance with the regulations?

"Yes, provided appointment during the summer does not take up an intermittent period without a break in the continuity of service, as this would in effect be on a par with the questions answered under (1), (2), and (3).

"I believe this answers the questions fully, but if you feel that you want any further information along this line, I shall be glad to furnish same."

EPIDEMIOLOGY

(Reported by Miss Laura Hamilton)

Mr. Allison is studying the effect of environmental conditions, particularly temperature, on the formation, production, and germination of teliospores of Puccinia graminis. At present he is inoculating mature and seedling plants and attempting to induce teliospore formation at different temperatures.

In the absence of Dr. Stakman, ecological studies on the barberry will be carried on under the supervision of Dr. Cotter. Experiments to determine the effect of light and shade on the number of berries produced will be made in Ohio by Mr. Atwood; he will also make observations on the relation of soil moisture to extent of root development. Mr. Lungren is continuing his studies on seed germination, and on rate of growth of plants at different elevations. Dr. Cotter expects to make observations and studies on several phases of the problem, and it is hoped that studies can be continued in Michigan. Controlled experiments in the greenhouse have been outlined for Mr. Melander, on the effect of low temperature, light, and other factors on the germination of seed and establishment of seedlings.

Mr. Hines is making a trip by train to the flying fields at Dayton, Ohio, and at Rantoul, Illinois, and made slide exposures from airplanes on May 24 and 29th. Under the cooperative arrangement between the Department of War and the Department of Agriculture, Mr. Hines hopes to arrange for the continuance of exposures until rust becomes general in the Eastern area.

Stationary slide exposures are being made near St. Paul, Minn. In addition, the help of Mr. Bulger in Nebraska, Mr. Mayoue, and Mr. Caldwell has been asked in exposing slides, in an attempt to determine when the first stem rust spores are blown in, or when spores from infected barberries become prevalent in the air.

Exposures from airplanes are being made at Fort Sill, Okla. by Mr. Ukkelberg. During the week of May 19 he made observations on grain in northern Texas, in the Sherman-Fort Worth-Denton area. Stem rust on wheat is beginning to appear in southern Oklahoma, according to observations made on May 15, and inoculum is plentiful in southern and central Texas for rapid increase as soon as temperatures become favorable. Infection on oats apparently is appearing later than on wheat: on May 13 Mr. Ukkelberg was unable to find stem rust on oats north of Austin. He plans to keep ahead of the northward spread of rust, and will therefore begin soon to make slide exposures at Fort Riley, Kansas.

Dr. Cotter is making a trip by automobile through Missouri and Kansas for the purpose of making observations on barberry plantings. Five or six years ago a considerable number of locations were mapped, and each year since that time some of the locations have been visited. This year Dr. Cotter is making complete observations and will locate any plantings which appear to be particularly favorable for study later in the season.

Aecial infection on barberries has been reported from the eradication States east of the Mississippi, and from Iowa and Minnesota. Pycnial infection has been reported in South Dakota. Excellent reports on rust conditions are being received from Messrs. Atwood, Leer, Bills, and Davis, and Caldwell. Mr. Hunter also has been sending good reports concerning his observations in Michigan.

A manuscript is in preparation by Dr. Levine and Dr. Cotter entitled "Susceptibility and Resistance of *Berberis* and related genera to *Puccinia graminis* Pers." In tabulated form will be given a complete synonymy of all species and varieties for which there is some definite knowledge regarding susceptibility or resistance. In another table are listed all species and varieties upon which artificial infection was produced or upon which field and herbarium observations were made. In a third table those members of Berberidaceae are included that have not become infected as a result of repeated inoculations with teliospores of *P. graminis*.

EASTERN REGION

Ohio - 8 East Broad Street, Columbus - Harry Atwood

Several known barberry locations in various sections of the State have been visited during the last weeks of May for the purpose of observing infection. This year infection is quite generally distributed throughout the State, and a sprinkling of black stem rust was found in Montgomery County on May 29.

The agents who are searching among the shrubbery in Dayton and vicinity have reported 60 locations of barberry this month. Because of the necessity of protecting other shrubbery the agents are resorting to the use of the mattock in these removals.

Messrs. Holmes, Ames, and Thompson joined Charles R. Tom and his squad at Dayton on June 2. These men are conducting the survey in Van Buren Township, Montgomery County.

Leaf rust on wheat and rye has developed rapidly within the past two weeks.

Indiana - Agricultural Experiment Station, La Fayette - Wayne E. Leer

On May 26, infected red top was found beneath infected barberry bushes near Attica in Fountain County. One pustule of stem rust was found on rye about one-fourth mile from the infected bushes.

The field men working in an area of escaped bushes in Owen County finished the area near Freedom and expect to finish the area near Ellettsville by June 7. On June 9 these field men will go to work in an area of escaped bushes north of Richmond in Wayne County. A large number of bushes producing fruit for the first time were found in this area during the last week of May. This area was discovered in 1922. The last work was done in the area in 1926. It was quite surprising to find such large bushes in this area. Since 1922, 2,307 bushes and 471 seedlings have been destroyed in this area which covers approximately 90 square miles.

A roadside demonstration was prepared and placed on a main traveled road between Spencer and Ellettsville and has attracted a great deal of attention. A medium-sized escaped bush was found growing in a wire fence along this road and furnished an ideal location for such a demonstration. It is planned to leave this demonstration in its present location until fall.

The county agents in Bartholomew and Decatur Counties were interviewed during the week of May 19 and plans made for the work in these counties during the summer. We have the assurance of the cooperation of these two county agents who have been anxious for survey work in these counties for several years, due to the prevalence of stem rust.

The Barberry Leader attended the Indiana Academy of Science meeting at Nashville on May 23. Barberry eradication was discussed in many informal groups. Contacts were made with members of the botany departments of several of the Indiana colleges. The colleges and universities of the State seem anxious to give our problem attention in the classes during the year.

Illinois - Box 72, Post Office Building, Urbana - R. W. Bills

Selection of all the 1930 field men for barberry eradication activities has been completed. Four men have been in the field since April 11, and 22 more will report on June 12 bringing the total to 26 Federal men.

The Superintendent of State Division of Plant Industry, Mr. P. S. Haner, has arranged to furnish 8 additional men and 3 automobiles. All the activities will be carried on under Federal supervision.

Work will begin in southern Illinois where the original survey of the State will be completed in a few weeks, after which the second survey of Lake, Stephenson, Kane, and DuPage will be continued. These northern counties contain areas of escaped bushes and are in need of attention.

Mr. C. E. Adams reported the first trace of stem rust on wheat in Jackson County on May 28. Careful observations have been made since April 11 in southern Illinois. The Barberry Leader found a heavy infection of rust (aecia) on barberry in LaSalle County on May 31. No spreads have been noted yet.

Michigan - Agricultural College, East Lansing - Francis B. Powers

The Barberry Leader and the assistant leader returned May 19 from a general survey of the territory where the barberry eradication squads are to work this summer.

At present a squad is making a second survey in Allegan County, a part of which is a sand dune region along Lake Michigan. The majority of the bushes in this region are escapes. Since the 15th of May 1,690 new bushes, 1,295 sprouting bushes, and 557 seedlings have been removed in Allegan County. Many of these were on the property of summer residents and near other shrubbery, so they had to be dug. However, digging is not difficult in the fine sand of dunes. The eastern half of the county requires and permits more readily the use of salt. Evidence that bushes are sprouting from old diggings indicates salting to be the most economical method of eradication.

The original survey is to be completed in Leelanau County, a sand dune summer resort region along Lake Michigan and other small lakes bordering it. Another is to be started in Presque Isle County, a cut-over timber area along Lake Huron at the upper end of the lower peninsula. Intensive work is to start June 23 with about 5 squads in the field.

Cooperation in Presque Isle County has been pledged by the school commissioner, county agent, agricultural teacher, the editor of the Presque Isle Advance, and the editor of the Onaway Outlook. Already a hedge of 38 large bushes has been reported by the county agent, lessons have been given by the agricultural teacher, news articles have appeared in the papers; and material has been distributed in rural schools.

In the region now being worked there has been considerable rain and cold weather with strong winds from both east and southwest. Rye and wheat are heading and most of the oats is just coming above ground, less than two inches high. The first uredinial infection of stem rust was found on rye May 22. As a result of a rust survey made by G. S. McIntyre May 28 covering various regions in Allegan County, he reports very little stem rust in the east (inland) side of the county but an increasing amount toward the west (shore side). Rye is severely infected with leaf rust. Considering weather conditions and the fact that nearly all common barberries have considerable aecia, it would seem that with favorable weather the stem rust may become severe.

Wisconsin - State Capitol Annex, Madison - Ralph M. Caldwell

The selection of field men for the Wisconsin barberry eradication force was completed when a semi-competitive examination was given. Twenty-six men including squad leaders will be employed this season on temporary appointment. An additional 10 men are being selected from among local people in the Black Earth region. They will work under supervision of experienced men in eradication work in the area of escaped bushes there. Field operations will begin on June 16.

Survey and eradication work this season will be concentrated in known areas of escaped bushes. Areas in the most productive grain regions will be dealt with first and attention will be given later to areas in the less important cereal producing regions.

Weather conditions have been ideal for the infection of barberry bushes by stem rust during the past two weeks with almost daily showers or prolonged rains. The bushes are moderately heavily infected with rust, near telial inoculum, this year in contrast to a very light infection last year. The first open aecia were found and reported on May 14. No rust of any kind has yet been found on grass or cereal hosts.

WESTERN REGION

Minnesota - University Farm, St. Paul - Leonard W. Melander

The resurvey of Mower County has been under way since May 1. In this survey the original locations of former bushes are being checked and the adjacent groves and woodlots also are being checked.. Escaped bushes are being found in adjacent near-by groves which were not located on the first survey or which have developed since the first survey in 1922. However, this county is not difficult to survey because the topography is more or less flat and most of the groves are planted.

The survey crew was transferred to Lakeville on May 28 to press as many specimens of rusted barberry as possible. We hope to get about 100,000. The bushes this year, in general, are heavily rusted in Minnesota. To date this crew has pressed more than 30,000 specimens.

The aecia have been shooting spores since the 14th of May. A trace of uredinia was found on what was thought to be redtop near Preston on May 27. This was near barberry.

The amount of interest in the National Rust Busters Club is increasing all the time. May 22 the Barberry Leader organized another club of agricultural boys at Rochester. The membership will be about 50. One of the best finds this spring was the locating of a large group of barberries by a school teacher. It was a very good find as the bushes were located out in a woodlot a considerable distance from the road.

We are doing everything possible to encourage boys and girls to look for common barberry bushes. Mr. Seymour, an agricultural instructor at Plainview, reported two locations of common barberry bushes found by his boys. These locations contained large escaped bushes. There is a possibility that by the end of the summer we will have presented quite a few medals for locating barberries. The interesting part of these finds is that the new locations that are being found are all in the southeastern part of the State which has not been second-surveyed.

Arrangements have been made for the Barberry Leader to announce the medal contest to the boys and girls who will attend the short course to be held at University Farm the week of June 2. An attendance of about 900 is expected.

Plans are being made to start the second survey activities June 16. Plans are also being made for a field school on that day. The whole crew perhaps will be taken to Anoka where there is an area of escaped bushes. During the noon hour we will have a picnic lunch and perhaps some talks will be given by Dean Freeman and Mr. Woodward, a grain man of Minneapolis who has asked for the privilege of accompanying the barberry crews to see how the work is conducted. The escaped area at Anoka will give the men experience in scouting as well as the proper methods of salting.

Iowa - Morrill Hall, Iowa State College, Ames.- D. R. Shepherd

The barberry eradication field force in the State have completed one county, Palo Alto, this spring. On this survey they found a total of 189 bushes, sprouting bushes, and seedlings. Eight barberry agents are now located in Kossuth County, where for the past two weeks they have been conducting second survey. Since arriving in that county the men have found and destroyed 187 barberries. A tip was recently looked up by the Barberry Leader and one of the agents in that county which revealed an escaped area of more than 100 bushes. As yet the bushes have not been destroyed. This planting is located in northern Kossuth County about 6 miles from the Minnesota line. A total of 411 bushes have been found and destroyed in Iowa during the month of May.

The Barberry Leader spent 4 days in the field surveying with the men in Kossuth County and making rust observations in the northwestern part of the State. Many field observations were made for stem rust but no rust was found. Farmers in the northwestern part of Iowa report that

the crop is quite badly in need of a rain, although as yet it is not suffering. The Barberry Leader found this condition prevalent between Amos and Algona. Barberries that have been found the last two weeks have been heavily infected and in most cases the cluster cups were open and shooting spores. Because of this condition bushes have been cut off about 8 inches above the ground and the tops burned in all cases. No stem rust has been found on grains or grasses in the State so far this year, at least so far as the knowledge of this office is concerned. Incidentally buckthorn that have been noticed while the men were surveying for barberries this spring have been very heavily infected.

The assistant leader, Mr. Cassell, met with a group of about 25 farm bureau members in Portland Township, Kossuth County, recently. He made a short talk which was supplemented with lantern slides. He reports a very favorable attitude on the part of the farmers in that community.

Very fine cooperation has been obtained in the two counties where the field agents have been working. The circular letter sent out to all farm bureau members by the county agent in these counties proved to be very helpful. No doubt because of this the men have been receiving hearty welcomes from the farmers of that section. Window displays have been arranged in several of the towns in the counties. News stories announcing the arrival of the agents were also published in the newspapers of the immediate territory where the agents are working.

The men in the field report the barberries that have been found so far this year have all had heavy aecial infection.

District No. 1 - State College Station, Fargo, N. Dak. - G. C. Mayoue

The major part of the work in this District has been generally confined to duties preparatory to the coming field survey. Educational work in the schools, and the mailing of circulars, has been practically completed for this year.

The mailing of Progress Reports to a list of 1,600 Montana farmers, newspaper men, and county agents, and to Wyoming county agents, has been completed. Lesson plans and literature files were sent to some 1,800 teachers in Wyoming and Montana. At approximately the same time, circular letters explaining the National Rust Busters Club were sent to these same teachers. In response to these, many school children have been making themselves eligible for membership in the Rust Busters Club by returning essays on barberry eradication and black stem rust control. As a result of this new incentive to hunt for bushes, students throughout the two States are submitting many samples of bushes for identification.

The National Rust Busters Clubs recently organized in Barnes County, North Dakota have been evidencing a genuine interest in this

new project. Of the many letters which have been received from "Rust Busters," the one of the most interest was that from 6-year old Dorothy Hauser, a first grader in the Oriska Consolidated schools. While with her father hunting for turkey nests in a grove adjacent to their farm the little girl discovered several barberry bushes growing in the rather dense underbrush of the abandoned farm site. Comparison with her Rust Busters button convinced Dorothy and her father that the bushes were common barberry. These were reported to the barberry office through the Superintendent of the Oriska school. Investigation of the report revealed 3 old bushes and many sprouts. Arrangements were immediately made to take advantage of this favorable publicity and to arouse local interest by presentation of the medal badge before a general assembly of the grade students.

This find is of particular interest because it is at the approximate source of a rust area which has been under observation for the past several years. This area has been observed not only by agents from the State office, but also by epidemiologists from University Farm, St. Paul, and the Conference for the Prevention of Rust. At the time of their discovery the bushes bore fairly heavy aecial infection nearly ready to break. While this planting is large enough to account for the rust spreads which have been regularly found in this area, it is planned to intensively survey the immediate region for escapes or missed bushes.

A display on barberry eradication was incorporated as part of the college exhibit during the annual open-house of the May Festival. It is estimated that this display was viewed by four to six thousand people.

District No.2 - Box 66, State College Station, Brookings, S. Dak. -
Raymond O.Bulger

The first stem rust infection on barberries in District No. 2 this year was found at Brookings on May 8. At that time pycnial infection was evident and the aecia were just beginning to form. At the present time (May 24) aecia are fairly well developed but no spores have been discharged.

The 4 men who began work May 1 in South Dakota completed the second survey for barberries in Charles Mix County and are now doing second survey in Aurora County. The squad leader reported that one planting of 2 bushes was found on May 21 which was heavily infected with stem rust and which would have been dispersing spores soon if the bushes had not been destroyed.

No stem rust infection has been found on grains or grasses to date, but one pustule of orange leaf rust was found in Aurora County.

The District Leader was invited to talk at Pierre, South Dakota, on barberry eradication and stem rust to a group of members of the Young Citizens League - an organization of school children. This group is trained in citizenship and in bettering school and community conditions. Approximately 800 people heard the talk, including members of the Young

Citizens League and adults from different parts of the State. Some of this latter group were State officials and other people holding influential positions.

Two men began work in Nebraska June 2, and 16 others have been selected to begin survey there June 9 and 10. Fourteen men besides the squad now working will begin work June 16 and 17 in South Dakota.

District No. 3 - Agricultural College, Ft. Collins, Colo. - E. A. Lungren.

A barberry demonstration was given by the agricultural instructor of the Big Thompson Community in Larimer County, Colo. One of the pupils found an escaped bush on an irrigation ditch near his home after the lesson had been presented to him in the class. The instructor then took the class out to show them the bush and how to kill it. They took a sack of salt along for the treatment. After the demonstration the class as a whole scouted the premises which contained many ditches and woodlots. One of the other pupils in this scouting found an additional bush. This calls for two medals for the Big Thompson school for rust busting.

Two men started work in El Paso County, Colo. on June 2. A second survey will be made of this county and inasmuch as little work has been done since the original survey, we expect to make some interesting finds.

Last week field work was done in two escaped areas in the irrigation districts in Larimer and Arapahoe Counties. Six small escaped bushes were found each of which had moderate pycnial infection. One bush was reported by County Agent Kiely in Longmont, Colo. The District Leader eradicated the bush. No infection was found.

The District Leader has conferred with Extension Agronomist Guy Stewart and State Club Leader Mr. Ferguson on getting the Rust Buster plan organized in Colorado among the boys clubs.

Rain has extended rather generally over the State and an abundance of much needed moisture fell. We have sufficient now to make a good grain crop and irrigation waters can be saved for another month at least. The outlook for crops in this District looks good for this year.

Weather conditions have been ideal for barberry infection during the month of May. Pycnia has been found and aecia should appear soon. No stem rust has been found to date.

The District Leader recently was in Laramie, Wyoming, conferring with officials regarding the work in that State. They were very much impressed with our work and are giving their full cooperation and support. Our work in Wyoming will be through the extension division yet we have full support of all the other branches.

Personal Notes

Mr. F. C. Meier spent the week of June 9 in the field with Mr. Offord, and Mr. Wyckoff of the Blister Rust Control office, making a special survey of areas of escaped barberries suitable for chemical eradication experiments.

Mr. Donald G. Fletcher will spend some time in the Washington Office assisting Mr. Meier.

Mr. Charles O. Violet was in Washington conferring with Mr. Meier and Mr. Morrison after spending a week at the Arnold Arboretum in Massachusetts. Mr. Violet will make a special survey of the nurseries in Ohio.

Miss Lucille Friedman, clerk-stenographer in Illinois, resigned on May 23 and Miss Nellie Prevette has been selected to take her place.

An announcement has been received in this office of the marriage on May 28 at Winchester, Virginia, of Dr. F. E. Kempton and Miss Ellen A. Fenner. Doctor Kempton was National Leader of the Barberry Eradication Campaign from 1918 to 1927, inclusive.